

CINEMA OF THE MIND SEMINAR BOOK, June 1994

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MAIN POINTS & EVENTS

ACTUAL AGENDA OF SEMINAR -----

DAY ONE: INTRO, PDGM, AXS, CINEMA, VIRT

AUTOMATIC SHIFT QUESTION

THE POSSIBILITIES OF SW

QUICK INTROS

BRIEF INTRO TO SEMINAR

BRIEF INTRO TO TN

BRIEF INTROS AROUND ROOM

Name, place, one sentence abt yr interests

OPENERS -----

THIS IS A YEAR COURSE, WE GOTTA GO FAST

34 years in 3 days

RULES FOR CLASS

Little time to argue

You're here to learn my views, some came far

Your views will be Noted & Pondered

(I've heard most views, my views NOT heard)

NOTHING HAS BEEN TRIED!

We've STANDARDIZED ON THE TRIVIAL & STUPID

ANYTHING CAN BE SHOWN

dimensions

time

space

color

ANYTHING CAN BE MANIPULATED!

Complex compound manips have HARDLY BEGUN!

SOFTWARE MOST CONTROVERSIAL AREA IN WORLD?

SOFTWARE IS A RELIGIOUS ISSUE

CENTRAL ISSUES AND IDEOLOGY:

Interface & Data Structure,

Representation & Presentation

Representation, Internal Paradigm

"Interface" (Presentation, External Paradigm)

Hollywoodization of Softbiz

How can it be better? POLITICS OF CREATIVITY

**PARADIGMS, NELSON'S EXTENDED THEORY OF
KUHN**

I've gotten to know the problem well

Paradigm: Idea too big to get through the door

How to know: Craziest of the other

"My paradigm subsumes your paradigm."

Generalization of "Religion"

"Religious Issues" a SPECIAL CASE

HIGHLY EMOTIONAL

"EMOTIONAL ISSUES" are PARADIGMATIC

Paradigms and ANGER

"Your paradigm"

WHAT THINGS YOU THINK IMPORTANT

Views of Deserving, right, wrong

Heaven, hell, afterlife ("posterity" among agnostics)

PARADIGM EXERCISE?

(need a TWO-DAY WORKSHOP JUST TO SEE OWN PDIGMS)

Can you write out your paradigms?

SOME QUESTIONS

People should be rewarded for--

My purpose in life is --

I truly hate it when someone --

The purpose of life is--

SOME NEW PARADIGM TERMS

Paradigm Boundary

Paradigm Confrontation

Paradigm Warp

Refractive:

What you think other guy thinks

PARADIGM LOCK

when you can't imagine anything else

Paradigm Conversion

Highly emotional event

Typically one-on-one

"pray with me"

"let me show you the True God"

"Let me show you the True Language"

'Brainwashing'-- SOCIALLY PUSHED PARADIGM SHIFT

Hostile views of paradigms

"Cult"

"Addiction"

KEY INSIGHT ABOUT PARADIGMS:

Coordinate-Space of Status and Territory
TODAY'S NIGHTMARE COMPUTER WORLD
THE NIGHTMARE WORLD OF MOST EQUIPMENT

Designed by Engineers--
"LET'S KEEP ADDING FEATURES"

Answering machines

VCRs

Fax machines

AND ON AND ON

Old "complicated" cameras

focus

shutter

aperture

New "simple" cameras

Automatic and manual focus

Shutter priority

Aperture priority

Options and Overrides up the kazoo

My New Answering Machine-- SIMPLIFYING POKES

Stop OGM on incoming call by hitting # (?)

Stop payout while answering by hitting * (?)

Only way I can remember:

"If it's doing something I don't like, hit one of those."

COMPUTER WORLD TODAY APPALLING, MONSTROUS

Where else do you have to pay to have your time wasted endlessly?

ROTTEN SOFTWARE

Absurd complications

NO INSTANT USE

Lack of integration

Time people must spend

James Joyce Principle

Obedience to MSoft & Apple

People THINK THEY KNOW WHAT SOFTWARE IS!

You haven't seen anything yet

EASE OF USE WILL COME.

MYTH OF PRIMITIVE SOFTWARE THREESOME

WP, DB, SSH

These are ARBITRARY CONSTRUCTS,

superficially plausible

SCHOOLS OF SOFTWARE: Main Interactive Churches

PARC (Mac, Windows)

MIT (AI, Media Lab, Agents, "Trust Us")

Old AI Paradigm

New Media Lab Paradigm

"Virtual Reality"

(Oxymoron for Interactive Realism)

Ted Nelson (To Be Presented)

THE CHURCHES OF INT. SOFTWARE, CHRONOLOGICALLY

Line Commands (1960)

Early Screen-Manip (Sketchpad, 1960)

AI (early sixties)

TN (1960)

PARC, esp. Alan Kay (Late Screen-Manip, ca 1970)

OTHER SCHOOLS OF DESIGN

(Bell Labs Design Paradigm: "RIGHT CORNER")

MYTHS OF SOFTWARE DESIGN

"Intuitive"

"Oh, sure, it's always seemed to me that

Command-V meant ..." -- Margie Levine

User-Friendliness

"Hi, I'm Proggie the Program!" -- NOT

Metaphors

Scraps of resemblance as mnemonic 7 viz'n hints

Claim that WP, SSH, DB are METAPHORS

"Outliner" NOT A METAPHOR

WISIWYG

Using computer as 2d PAPER SIMULATOR

"Direct Manipulation" (Ben Schneiderman)

It's not direct, it's a PROXY!

"Modelessness"

Every separate program is a mode.

"GUIs"

Misdefined as PARC windows

-- no way to link window contents

There'll be a lot more, and VERY different

"INTERFACE"

Implies given functionalities

"FUNCTIONALITY"

FUNCTIONALITY NOT ENOUGH

The Nelson Standard Clock

"METAPHORS"

Is 'metaphor' ALL STRUCTURE & MEANING?

Cheapens the word

scraps of resemblance

as cheap mnemonic hooks

THE TRUTHS WE SEEK

How to design the Best Stuff

SIMPLICITY, CLARITY

COMPLICATION-- How avoid it, What Is It?

THE REAL ISSUES OF GOOD SOFTWARE

SELF-REVEALING (Klavs Landberg)

Good software is RETROACTIVELY OBVIOUS

Prob. is making it Retroactively Obvious FAST

PRODUCTION VALUES/PERFORMANCE VALUES

Not functionality but EFFECTS are main cost.

Nelson 10-minute rule

Should be productively used within TEN MINUTES.

(Note Pac-Man: WITHIN TWO QUARTERS.

TRULY INTEGRATED SOFTWARE (cosmic software?)

Work is a seamless whole;

Shd be SEAMLESS WHOLE OF SOFTWARE

"Pushing the Problem Out"--

Real probs. lie OUTSIDE the "Application"

The real design challenge:

A WORLD YOU DON'T LEAVE

PAC-MAN, THE MODEL FOR OFFICE SOFTWARE

Instantly learnable

Documentation slight

"The Manual for Pac-Man"

Productively in use within TWO QUARTERS.

PROGRESSIVELY SELF-REVEALING.

RAMIFICATIONS SHOW UP GRADUALLY.

Vivid.

Good sound effects.

Fast response.

HIGH PRODUCTION/PERFORMANCE VALUES.

INTEGRATION AND "APPLICATIONS"

"APPLICATIONS" a mistake-- SEVERED ZONES OF WORK

"Integrated software" means NO APPLICATIONS

SILLY NOTIONS OF "INTEGRATION"

They think it's WP-SSH-DB somehow combined

"integrated software" unimaginable

"cuisine" analogy

SOFTWARE CONCERNS ABSTRACT CONSTRUCTS

SW design as ART OF ABSTRAX STRUX, like GAMES

THE SEARCH FOR DEEPER CONSTRUCTS

DESIGNING FOR OTHERS NOT LIKE YOURSELF

ENGINEERS DON'T UNDERSTAND WHAT'S DIFFICULT FOR OTHERS

WRONG MODEL OF THE USER

FRANTIC IMPATIENT FORGETFUL USERS

Designing for "the man in the street"

Removes from the customer

DESIGNING FOR YOURSELF: the only right way

BREAK

ACCESS STRUCTURE

(T. Nelson, early sixties)

A GENERAL MODEL OF CONVENIENCE, IMPEDIMENT & CLARITY

Discrete approximation

Generalization of core-disk-tape

Examples of access structure:

Digital radios

Your neighborhood

Your clothes

What you can reach in the car

AXS EXAMPLE: ANY SOFTWARE

ACCESS STRUCTURE: THE MODEL

Anything definiable by ORDER OF ACCESS

(ADDITIONAL LEVELS OF ENCUMBERMENT)

Zero-Order Access

First-Order Access

Second-Order Access

Uncovering operations

Parallel vs Serial Access

Access Maps

Two-Sided Access

Lunch Counter

Disneyland garbage

Everything has an access structure

Buildings

Houses

Cities

SOFTWARE

ACCESS STRUCTURE OF OPTIONS IN EQUIPMENT

FAR TOO MANY OPTIONS FOR MOST PEOPLE

Engineers try to fit in too many options

Sharper Image sells less func for more money

OPTIONS versus "Basic Stuff"

Unfortunately, what's Basic?

ACCESS STRUCTURE OF OPTIONS IN SOFTWARE

Access Structure to Start Writing in M.Word

Menuplexes

Access Structure of Mac Finder

Modalities

Config Files

Installation Procedures

INCOHERENT MENUPLEX EXAMPLES

eg Mac and Word

To shut down Word when it's not showing-

You have to get to it on the RIGHT

Then shut it down

Breakout session: *AXS EXERCISES*

Access Structure of your pockets

Access Structure of your Desk

Access Structure of Mac/Windows top level

Access Structure of Your Favorite Software

EMERGENCY EQUIPT IN YR HOUSE

YOUR HOME

Map your addresses and schedule

PARTS OF YOUR TYPICAL WORK

YOUR POCKETS

YOUR NEIGHBORHOOD

Map your clothes

Access structure of AIRPORT

ACCESS STRUCTURE OF AIRPLANE SEAT (not your stuff)

ACCESS STRUCTURE OF AIRPLANE SEAT, INCL. YR
STUFF

"Wet hands"

PUTTING THINGS AWAY

Less accessible

More Findable from Scratch

("neater looking" is separate)

LUNCH

AFTER LUNCH (GOTTA BE INTERESTING)

MOVIES AND SOFTWARE

SOFTWARE IS A BRANCH OF CINEMA

Movie-Making the Best Prep

Cameraman = Programmer

SHOW MOVIELETS

Opening of "Pinocchio"

Pivot of "It's a Wonderful Life"

GENERALIZATIONS OF MOVIES TO SOFTWARE-- many

DISCUSSION

PRODUCTION VALUES, PERFORMANCE VALUES

Backer-Author Conflict

Big Projects, Big Budgets

Hollywood & Hollywoodization

Auteurism

VIRTUALITY the key generalization of movies

THEORY OF VIRTUALITY

VIRTUALITY, The Word

centuries in dictionary

Virtual: "Existing in essence or effect, but not in fact"
(Webster, 1913)

Virt is Opp of "reality"

"Seeming"

"Illusion"

"Imaginary"

"Notional"

(Bloody trademark for a VR ride)

VIRTUALITY DEFINED & EXPLAINED

Complement of "reality"

Everything has a real and a virtual aspect

EXTREME OF VIRT: THE MOVIE & FISHHOOK

Virtuality has two aspects:

CONCEPTUAL STRUCTURE

FEEL

VIRT OF CAR

VIRT OF ARCHITECTURE

Virtuality's constituents: CONCEPTUAL STRUCTURE

CONSTRUCTS & THEIR INTERFIT

Virtuality's constituents: FEEL

Feel of a CAR

Feel of ARCHITECTURE

VIRT OF MOVIES

DESIGN OF VIRTUALITY IN MOVIES

Conceptual structure: SCRIPT

Feel:

ATMOSPHERE

CHARACTER

SUSPENSE

etc.

DESIGN OF VIRTUALITY IN SOFTWARE

Conceptual structure:

Perceived Structure

Perceived Functionality

Feel:

Appropriateness of controls

Good visualizations

Appropriate responsiveness

Good complementarities

VIRTUALITY VERSUS METAPHOR

Cf. STRUCTURE OF CHESS (a Virtuality)

the metaphor is only temporary;

after that, it's the rules of the game

(you don't think, "what would a true king do now?)

VIRTUALITY EXERCISES

Just the Conceptual Structure can be hard

Design of "Voicemail"

List the Functions

Find a Unity

Design of Dictation System

List the Functions

Why are they different?

MANUAL AND DESCRIPTIONS partly define Virt

How you describe it is part of conceptual strux

Master diagrams

THE DESIGN OF VIRTUALITY

DESIGN OF VIRTUALITY-- THE IDEA

You get an idea, then work it out in detail

THE DESIGN OF VIRTUALITY-- THE SEQUENCE

Design the conceptual structure

Know what feel you want

Detail it, KEEPING THE FEEL IN MIND

Detailing in movies

Detailing in software

HIGHER VIRTUALITY -- TYING THINGS TOGETHER

Seeking a Higher Virtuality

Apple Finder Virt

"Clipboard" Virt

PARC-WINDOW VIRT

Higher Virtuality of Voicemail, Dictation, Audio Filing

METAVIRTUALITIES -- BACKBONE PARADIGMS

Controversial

Hierarchical Files vs Zipper Lists

Client/Server vs Docuverse

PARC Windows vs Deep-linked windows

Separated Windows vs Collateral Viewing

"The Most Fundamental Tool of Human Thought"

MULTITHREADING, TN's METAVIRT OF WRITING

APPROACHES TO DESIGN UNIFICATION--

VIRTUALITY DESIGN: TOP-DOWN

The Outline

VIRTUALITY DESIGN, BOTTOM-UP

True Cut-&-Paste Exercise (Noodles)

VIRTUALITY DESIGN, Upward AND Downward

You don't make up the plot first

(then add the atmosphere)

It all evolves at once

WRITING, PRINCIPAL EXAMPLE OF DESIGN

(even if it's just sequential writing)

ARBITRARY STRUCTURE (sequence)

Top-down writing (outline)

Bottom-up writing (noodles)

Mixed up-&-down (classical cut & paste)

EXERCISE: WRITING SEQUENCE & TRANSITIONS

TRUE CUT AND PASTE (Tolstoi Noodles)

Mac Cut & Paste vs Tolstoy Cut & Paste (Noodles)

DETAILING OF A VIRT

AUTEURISM

Auteur theory of SW Design

Director has Overview

"METAPHORS" vs Virt

VIRT & METAPHOR TALK OVERLAP

Often "metaphor" used to mean "structure" (very poor)

Angels-on-a-pin nonsense of Metaphors

TRUE REPRESENTATION, TRUE VIRT

DAY TWO.

MAIN TEAM EXERCISE I:

"Let's Make a Movie!"

Rapporteurs

Discussion.

LUNCH.

MAIN TEAM EXERCISE II:

"Let's Design a Program!"

Rapporteurs.

Discussion.

WHAT IS THE DIFFERENCE BETWEEN THE TWO?

DAY THREE.

ISSUES OF UNITY AND CLARITY.

DISCUSSION.

BREAK.

(ZigZag & Dimensia, sorry)

THEMATICS

GENERAL THEMATICS: THE MODEL.

"IDEAS IN GENERAL"-- but a specific model

And giving it specific terminology.

"VERY LOGICAL" -- WHAT COULD IT MEAN?

Classical Logic

Containment

Venn Diagrams

Logical Operations

APPROPRIATENESS the generalization of Containment

A GENERALIZED SOFT LOGIC OF IDEAS.

Classic deductive Logic: premises, deduction.

Soft thematics: STYLES, DANCES, PROPS,

Character, culture, etc.

Softened generalization of logic:

**RAMIFICATION THE GENERALIZATION OF
DEDUCTION.**

**'THEME' THE SOFTENED GENERALIZATION OF
PRINCIPLE.**

THE THEMATIC MODEL

THEMES

RAMIFICATIONS

THREADS

ITEMS (instances, elements)

THRUST THREADS

SPECIFICATIONS

SPECIFICATIONS OF A THEME

LOCUTIONS

ALTERNATIVE LOCUTIONS OF A SPECIFICATION

RAMIFS: NEW ITEMS IN THE THRUST ZONE

SUPERCOMPLETENESS

Soft system allows contradiction

"ROMANTIC," a thematic word

THEMATIC DESIGN

CONDENSATIONAL DESIGN

(a Parallel Consideration)

commonality

transposition

reduction

CHOICE OF RAMIFICATIONS

SUPERCOMPLETENESS AS A DESIGN STAGE

SUBSTRUCTION TO FIT THE RAMIFICATIONS

THEMATIC UNIFICATION of a Virt

Final stage?

"Following where it leads"-- KING KONG

MEANING OF THEMATIC COHERENCE

High discrete accordances

Unifying themes

As precise as possible: GOOD SPECIFICATION

PRECISE SPECS MATCH AN INTUITIVE LEVEL

"Metaphors" vs THEMATICS

RAMIFS ARE NOT GIVEN BUT SELECTED

PAC-MAN HISTORY II: THEMATIC EVOLUTION

First Idea

Ramifications

VARIOUS DIRECTIONS OF THEMATIC BUILD

A THEME AS ITS SPECIFICATION

A THEME AS ITS ITEMS

THRUST OPTIONS

THEMATICS OF VIRTUALITY AND METAVIRTUALITY.

THEMATIC DESIGN EXAMPLES

POSTULATED FICTITIOUS HISTORY OF PAC-MAN

Evolving simple conceptual structure

Transposition

Condensation

Commonality

Dave Levine's BALLBLAZER as an example

JOT™ as Thematic Design. (A folded design.)

The unifier: STEPPING WITH SPACEBAR.

TANGLED RAMIFS EX.

M. Word OUTLINER tangles with HEADER VIEW

CROSS-SUBSUMPTION STATED THEMATICALLY

You could DO ANYTHING IN ANYTHING

WHAT'S THE BACKBONE OF THE SYSTEM?

Look at the movie excerpts again

"Wonderful Life" excerpt (reprise)

"Pinocchio" excerpt (reprise)

LUNCH.

Discussion.

AFTERNOON EXERCISES.

MOVIE REPRISES

"Pinocchio" excerpt (reprise)

END OF SEMINAR -----

"CINEMA OF THE MIND" BOOK FROM 1993.

(Continued rearrangement and
assimilation.)

Cinema of the Mind

**The Design of Interactive Software
Virtuality**

or

WAYS TO THINK ABOUT INTERACTIVE SOFTWARE

or

**CINEMATICS AND ABSTRACTION
AT THE COMPUTER SCREEN**

or

PAC-MAN, THE PROTOTYPE FOR OFFICE SYSTEMS

Outline of a Year-Length Course on the
Software Philosophy and Designs of Theodor
Holm Nelson

**DISCLAIMER: THIS IS NOT AN INTRODUCTION TO SOFTWARE OR SOFTWARE
DESIGN; WE ASSUME YOU HAVE HEARD THE USUAL VIEWS ALREADY. THIS IS AN
INTRODUCTION TO TED NELSON'S DESIGN PHILOSOPHY AND SPECIFIC DESIGNS.**

Cinema of the Mind Seminar Book, June 1994

VS d16

INCLUDING VIRT d5, the 1993 SEMINAR BOOK-- TO FOLD IN.

© 1994 T.Nelson

94.6.16 page 14

Price Fifty Dollars.

Date of this edition: 93.8.18

DUNNO

WHY NOT "INTERFACES"?

Suggests that internal structure is Settled

OUTLINE OF SEMINAR

BACKGROUND OF TN

PARADIGMS

CONSTRUCT WORLDS

MOVIES

VIRTUALITY

VIRTUALITY DESIGN PROCESS

MOVIEMAKING PROCESS

APPLIANCE DESIGN

NEW MEDIA

MEDIA DESIGN

LET'S MAKE A MOVIE (teams)

LET'S DESIGN SOFTWARE
(teams)

FINAL DISCUSSION

OUTLINE FILLED IN

BACKGROUND OF TN

TN as abstract philosopher

TN as movie-maker

1960 revelation and designs

History since 1960

"At last you're seeing everything you've worked for"-- **NOT!**

Field has gone more and more wrong

PARADIGMS

Anger, other's confusion

Faceplates

Religion a special case

View of virtue, morality, afterlife

One-on-one conversion

Everyone has a paradigm

CONSTRUCT WORLDS

Spreadsheet, Database, WP are INVENTED

We want to mix them

Hideous org problems with WP

Want dbase info in text

Want spreadsheet info in text

Want Wp in spreadsheet, etc.

MOVIES

Events on screen, heart & mind of viewer

PLUS INTERACTION

HISTORY OF MOVIES, invention of Director

VIRTUALITY

VIRTUALITY DESIGN PROCESS

MOVIEMAKING PROCESS

Unified Detailing cannot be delegated, must be in one head

Limitations of communication process

APPLIANCE DESIGN

THE AUTOMOBILE

THE PDA

THE VIDCAM

**THE VCR
THE COMPUTER SCREEN
NEW MEDIA**

HT

HM

"Interactive Television"

MEDIA DESIGN

LET'S MAKE A MOVIE (teams)

**LET'S DESIGN SOFTWARE
(teams)**

FINAL DISCUSSION

THEORETICAL UNDERPINNINGS

ACCESS STRUCTURE

THEMATICS

VIRTUALITY

VIRTUALITY DEFINED

Read definition from dictionary

VIRTUALITY VS. REALITY

MIXED CASE: THE CAR

PURE CASE: THE MOVIE

PURE CASE: THE VIDEO GAME

MIXED CASE: FUNCTIONAL SOFTWARE

ACCESS STRUCTURE

Applications of Access Structure

Default settings

Ringstep

CINEMA

CINEMA HISTORY

CINEMA PROPERLY UNDERSTOOD

THE PROPER GENERALIZATION OF CINEMA

INTERACTIVE SOFTWARE

JOT™

THEMATICS

DIFFERENT NOTIONS OF CONSISTENCY

THEMATICS AND SOFTWARE

FICTIONAL HISTORY OF PAC-MAN

MISC. POINTS

SOME OF MY FAVORITE THINGS

Ringstep

Latching tree

Zoom; CONTINUOUS VISIBILITY & ORIENTATION

MSC. POINTS

There are many kinds of orderliness

THE HANDLING OF A CAR

global optimization

CLARITY

Memorability

hand in water

globe

Odd implications of M.Word outliner

Odd implications of Macintosh

Inconsistencies of Macintosh

READINGS

SHOWINGS

It's a Wonderful Life rock-throw

Pinocchio opening

"VIRTUALITY" defined

Seeming

As-if

Imaginary or conceptual

"Notional" (Australian "notional railway")

PAC-MAN EXAMPLE 1: GOOD SOFTWARE

Satisfying activity within two quarters

Short manual (originally a paragraph on the side)

Escalating ramifications arise from basic premises

SELF-REVEALING: Discovery of ramifications

Pleasing sound and visuals

PAC-MAN EXAMPLE 2: THEMATIC EVOLUTION OF GAME

Follow a maze

Show where you've been on the maze. Line? Area fill? Add dots?

SUBTRACTION OF DOTS

HEY! HOW ABOUT-- this is really oral-- EATING DOTS?

Make it more interesting: monsters

Gotta be some way you can chase the monsters sometimes

EAT SPECIAL DOTS TO CHASE THE MONSTERS
ASSIMILATION OF WHOLE GAME TO "EATING DOTS"

NELSON HISTORY

Abstraction

Movie-making

Became stereoscopic understanding in 1960

The 1960 revelation and plan

NELSON PARADIGMS

GENERAL SCHEMATICS (1958-current)

General relational constructs

Abstraction

SPLANDREMICS (1960-1)

FANTICS (1969-74)

VIRTUALITY (1976-current)

ZIPPER LIST DESIGN

1965

1969

1981

VIRTUALITY DESIGN

Start with the Idea

Detail it

Integrate it

MOVIE-MAKING AS VIRTUALITY DESIGN

Script (the Idea)

Detailing: casting, location scouting, set design, music, photo style....

VIRTUALITY DESIGN SEQUENCE

Jingle

Converge
Assimilate
Prune

STRONG FAVORITE DESIGNS

No one-way buttons/jumps
Zoom, pan
Continual overview
True zoom

CONSTRUCT WORLDS; or

CONCEPTUAL WORLDS

CONSTRUCTS

SYSTEMS OF CONSTRUCTS

SYSTEMS OF CONSTRUCTS, CONCEPTUAL WORLDS

KEY BIBLIOGRAPHY BY OTHERS

Laurel, Brenda, XXX

Anthology of the more usual views.

Laurel herself holds the closest views to Nelson's: she sees software as a branch of Theater (taking as her model Aristotle's Poetics); Nelson sees it as a branch of Cinema and Abstract Constructs.

Wurman, Richard Saul, XXX

XXX, *Metaphors We Live By*

Tufte, Edward, *Envisioning Information*.

Superb picture-book on the presentation of information on the page.

Tufte, Edward, *The Visual Presentation of Quantitative Information*. (??)

Superb picture-book on the presentation of information on the page.

KEY BIBLIOGRAPHY BY NELSON (to include?)

Nelson, Theodor Holm, "A File Structure for the Complex, the Changing and the Indeterminate." Proceedings of the 1965 National Conference of the Association for Computing Machinery.

The basic design of all Nelson's designs: Zipper Lists, or parallel connected structures for indexing, versioning, and complex alternatives.

Nelson, Theodor Holm, "Getting It Out of Our System." In Schechter, Critique of Information Retrieval, 1968?

First article anywhere comparing interactive computers to movies.

Nelson, Theodor Holm, "Virtuality and the Art of Software Design" (?) *Creative Computing*, 1981?

First written presentation of Virtuality Design as a philosophy.

Nelson, Theodor Holm, "The Design of Media"

NELSON CAREER OUTLINE

HO d

ENDLINE
HERE

STAY OFF

THE SCHOOLS OF THOUGHT:

AI/Media Lab-- "Trust Us"

PARC-- disconnected windows, "metaphors"

Nelson (mostly unheard)

"METAPHORS"

XXX, Metaphors We Live By

Scraps of relationships: garbage can, "desktop"

Terrible combinations-- garbage can to save or destroy

HOW WRONG IT'S GONE!

Fascist PC versus MacBotch

the crime of Wizzywig

the folly of "metaphors," the delusion of "functionality"

the evil of "files"

the horror of "applications" (fanning out fractally).

ORTHOGONAL PARADIGMS

variously intercombining

HYPERTEXT

HYPERMEDIA

CINEMA: Interactive software is a movie and more: screen presentation to mind and heart of viewer, *plus* interaction.

Global optimization, a definition of Art: all parts unite and co-impact, the task cannot be decomposed into delegable parts, must be centralized in the mind and heart of the Director. A wide variety of effects are on the palette, with various costs as production values (or, in software, performance values).

VIRTUALITY, the *seeming* of something: its conceptual structure and feel.

VIRTUALITY VS. METAPHOR: unified, designed generality versus complexity built up from scraps.

GOOD SOFTWARE DESIGN IS DESIGN OF ABSTRACT CONCEPTUAL SPACES, which must be designed as wholes under a unifying artistic commander, as in film. Unified conceptual structure is vital; thus the structangular design of abstract virtuality is the fundamental process of software design.

The *feel* (in film, atmosphere and *mise-en-scene*) must be designed and perfected by the Director's many different adjustments throughout.

THEMATICS, a new threaded metalogic of structure, definition and inner meaning, defined in terms of principles, instances and ramifications. (Part of Nelson's General Schematics.)

Unity and organization may be defined as thematic metapredicates.

Thematic evolution of Pac-Man; how its brilliant achievements foreshadow true office software.

The search for cross-cutting organizational threads

Clever collapsing of function and controls (as in JOT™ text editor and PAC-MAN) versus disastrous collapsing (Mac garbage can).

FANTICS, the art and science of presentation (subsuming cinema, writing, diagrammatics and much more).

VISUALIZATION or mentalization: anything can be visualized, using enough tricks. Many views and flipping them fast.

Multidimensionality; paradoxical and punned spaces. The Word-Picture continuum, the Word-Picture-Interaction Continuum. Mapping of Contents/Subject Field to Presentational Space to Controls.

SEEING CONNECTIONS (Our windowing conventions, such as Xwindows, are screwed up, since they do not allow lines to be drawn from the contents of one window into the contents of another. These conventions will have to be replaced.)

CONVENTIONS IN ALL MEDIA: physical, visual, acoustic units, overlays, contexts, markers, transitions, groupings, identifiers, paragraphs, layouts, montages, jingles.

SOCIAL CONTEXT OF USAGE, eg classroom, TV viewing, radio at work.

ORGANIZATIONAL CONTEXTS, esp. time-slot and season schedule.

XANALOGICAL STORAGE AND PRESENTATION, as embodied in the forthcoming Xanadu™ connection-and-history server from Autodesk/XOC.

Storage must not just hold disconnected lumps or puddings (called *files*); the storage mechanism (i.e., the operating system at some level) must keep track of the changes in a given object, so you can slice it in time as well as space-- in such a way that side-by-side visualization of any two versions or instants in the object's life may be compared in parallel (and pointed out by links between interiors of panels, not allowed by today's windowing systems). *Links* between

changing objects must likewise be maintained (and of course easily shown by the parallel display of connected objects). Generalized mechanisms for the automatic showing of sameness and distinction in such parallel exploration I have long called *thinkertoys*; I consider them *the most important tools for thought* (strangely overlooked by the rest of the field). No thinkertoy exists. This calls for a generalized mechanism of data storage and feed.

Multithreading is the ability to use arbitrary chunks in many different units. (Serious linear writing calls for multithreading organizers, none of which yet exists. Outline processors not only assume that the final product is to be sequential, but inanely assume that it ought to be *kept sequential at every step along the way*.) Even a simple multithreading thinkertoy would be a great improvement over what we have today.

Transclusion means the virtual inclusion of materials across significant boundaries. The Xanadu™ server program will allow transclusion across documents and across accounts; later, across servers, network-wide. Its wholly generalized transclusion brings the hope of a universal literature based on wholly-generalized cross-document transclusion, with royalty on the delivered fragment, substantially clearing up the copyright problem.

LITERATURE: the Final Conglomeration.

The document and "literature" defined and generalized into the screen and repository future.

TOWARD A UNIFIED LANDSCAPE OF DATA. The Xanadu™ model of true representation, interconnection, versioning, repository publishing, and copyright simplification.

ACCESS STRUCTURE MAPPING, discrete and weighted.

Maps of what you can get to from where are crucial to all designs (including architecture, clothing, office systems and interactive software). Till now we have not explicitly

designed such structures, resulting in such interconnective horrors as Lotus menus and the New York subway system.

NOT SURE WHERE -----

FADS IN THE COMPUTER WORLD

"INTERACTIVE MULTIMEDIA"

"The Multimedia Platform"

HOLLYWOODIZATION OF THE COMPUTER WORLD

end

LESSER HEADING

z
y
x
z
y
x
w

HO VIRT d2 -----

VIRTSEM & VIRT NOTES

PARADIGMS FOR INTERACTIVE SOFTWARE

HO d1 -----

THE SEVEN NELSON PARADIGMS FOR INTERACTIVE SOFTWARE

FROM WINOTALK d14

(Summary for Ted Nelson's talk at Terry Winograd's lunchtime seminar, Stanford, 6
Mar 91)

MY SEVEN ORTHOGONAL PARADIGMS

*(Note: No room here for hypertext and hypermedia, or "interactive
multimedia.")*

HO d -----

endline ----- don't write here

STATUS, TERRITORY (TTRY), PARADIGM (PDGM)

TERRITORY

TERRAIN or OPERATIONAL SPACE

Scalar 2+D mappings of resources

STATUS

Evaluations

Acts of Valuation and Devaluation

Non-spatial mapping of advantage

TN SW PARADIGMS

SOFTWARE AS FORM OF MOVIE

S(L)IDEWAYS LINKING

Zips, Whichways, Xu Dox

TN'S IMAGINED WORLD OF THE 60z

Type anywhere

Dock with system

ONE CONGLOMERATE OF DATA

Universal transclusion, side-by-side viewing

Work in twilight

ELIMINATE PAPER

NONHIERARCHICAL

SKX

GENERAL SCHEMATICS, College & Grad School

An entire philosophical system

TN APPROACH

Personal approach: CONTRARIAN

Intuitive where others analytic & v.v.

Special insights in many places

I am the atom out of line in the crystal;

I see down tunnels others do not suspect

TN views of two brands of personal computers

HATE BOTH THE MAC AND THE PC

Respectively Fascist, Artsy

Haven't been able to keep any of my Macs working

TN's "Attention Deficiency Disorder"

(New term coined by Regularity Chauvinists)

Extremely absent-minded

impatient

can't remember names or faces

constantly forgetting

constantly mislaying, losing things

don't recall incomplete tasks

either don't finish or do several times

forget the things I buy

A.D.D. THE PERFECT PREP FOR SW DESIGN

--emp. w. impatient, flustered user

TN'S OVERALL WORK

(Fiction, Movie scripts, occasional songs etc.)

Philosophy and the Social Sciences

General Schematics

Theory of Strategy

(foundational for psych, other topics)

General theory of Biostatus

(foundational for psych)

Gen. theory of status, territory, paradigm

(foundational for psych, sociology & anth)

General Schematics (SKX)

Schematics (SKX)

Structures, modelling

Commonality, analogy

Correspondence

Discrete evolution

Normatics (NORX)

Models and Structures involving

Benefit

Results

Rules

Attitudes

Thematics & Idea Structure (IDSX, TX)

Flumatics (FLUM)

Studies in General Strategics (ACT, SRC)

(formerly "Action Center Theory")

Strategenics?

stratics?

strategemics?

stratentics?

(straatentity-- strategic entity)

Genstratics? (gen'l strategics)

Nelson SW Paradigms in Brief: Unifying abstractions

Today's Software World hopeless;

WE MUST START OVER!

ACCESS STRUCTURE

VIRTUALITY: Concep. Strusx & Feel

Conceptual Structure: ART OF ABSTRAX STRUX, like GAMES

SOFTWARE AS FORM OF MOVIE

Auteur theory of SW Design

"True" Virtuality

Metavirtualities

Thematics of Virtuality

COLLATERAL HTEXT: VIEWING & PRESENTATION

Collateral viewing & use of EVERYTHING

See the origins & sources, in context

See connected documents and comments

(in context of larger whole)

See the alternatives

See permutations and excerpts

(eg edited audiotape-- TRANSCLUDED)

COLLATERAL HTEXT: LINKAGE STRUCTURES

TOMORROW'S OP. SYSTEM

Multithreading, Zips, Whichways

Zip Structure

S(L)IDEWAYS LINKING

Xanadu* Publishing

LITERARY THEORY & SYSTEMS

Nature of document

INFO PACKAGE with POINT OF VIEW

Nature of literature is & has always been

LINKED DOCUMENTS

The electronic docuverse

ELECTRONIFICATION OF LITERATURE

MANIFEST DESTINY OF LITERATURE

Hypermedia and Hypertext

COLLATERAL HM & HT

Transclusion solves copyright problem

TN History of Ideas

TN BEFORE 1960

Very Philosophical Child

Totally Alienated from Age 11

Not Modest

Boyhood: MOVIES, LITERATURE

Filing and writing experiments in highschool

College: ABSTRACT PHILOSOPHY & MOVIES

Filing and writing experiments in college

1960: TN's Computer Revelations

1960: Computer is an INT. MEDIA MACHINE

1960: Computer deals w ARB ABSTRACTIONS

1960 REALIZATIONS

**My obsessions (abstrax & showbiz) gave me Stereoscopic
Vision**

**Computers deal with ARBITRARY
ABSTRACTIONS & CONSTRUCTS**

**Computers are MEDIA MACHINES-- but
INTERACTIVE!**

NONSEQUENTIAL WRITING POSSIBLE

HYPERTEXT

**Nonsequential writing
Structure all writing has groped toward
New generalized literary genre
Many kinds of designs
My preferred kind: COLLATERAL
(Documents side by side by side forever)**

THE CREATIVITY CONSOLE

**This would be the writer's/designer's/filmmaker's desk
Collateral Zip Editing
Origins
Alternatives**

1960 DESIGNS

**Complete Alternative World
COLLATERAL HT
HT TO REFORM EDUCATION
HT FOR MANAGEMENT
(now called "drill-down")
EVOLVING-PROJECT SYSTEM
(invented delta-list change-mgt)
(invented versioning)
(invented version forking)
DISCARDED "word processing"
DISCARDED "outline processing"
(invented CASE,
Computer-Assstd SW Engrg)**

World-Wide Publishing System

Royalty Proposal

Network of distrib'd documents

EXACTLY THE SAME: TRANSCLUSION

1960 PLAN

**Design of complete software world and electronic
publishing
Create McDonald's-like franchise for computer storage and
electronic publishing with royalty, unrestricted quotation**

TN THROUGH THE DECADES

Many attempts to Get My Stuff Up

Since 1967, called "Xanadu"*

I don't know anyone else who TOOK ON WHOLE BUNDLE

Unless you count Canon Cat guy

TED'S ALTERNATIVE WORLD

EVOLUTION BETWEEN PROJECTS

No "Applications"

Everything integrated software

One layer for writing & "files"

Human creativity at center

Always Inputting (not "word processing")

Links may be created from anything to any else

Links may be followed across whole docuverse

Instant view of connections to previous versions

INPUT ALWAYS SACRED, NOTHING LOST

Mac "clipboard"--Abominable hidey-hole

IRV, TN's evolving oeuvre

Continual accretion of material to Irv

Always organized

Zips, etc.

Splandremics (SPL) (TN Comp. paradigm 1960-5)

Mapping what's to be shown to available strux

Schematic Mapping:

Mapping desiderata to available alts

ANYTHING CAN BE SHOWN

ANYTHING CAN BE MANIPULATED

always a schematic representation or assgt

FANTICS (TN comp. paradigm 1968-75)

Computer SW & Media as Showbiz

Tricks and Techniques of showing

Vizualization

VIRTUALITY (TN comp. paradigm 1965-current)

THEMATICS (TN model of structure & design of ideas)

TN DESIGN I: BASIC COMP. DESIGN MODELS, EARLY

All my designs overlap categories:

I REPUDIATE CONVENTIONAL SOFTWARE

CATEGORIES AS PRIMARIES

SAFETY OF CREATIVE INPUT

Storing every input item on disk

BASIC DESIGN OF ALL XANALOGICAL SW

Great pool, plus pointers

Delta-lists (until Swarthmore Server)

Sideways viewing

HYPertext MORALISMS

SHOW THE TRUE STRUCTURE OF EVERYTHING

**LET READER BROWSE AUTHOR'S STRUCTURE OF
THOUGHT**

SMASH THE SCHOOL SYSTEM!

LET STUDENT EXPLORE EVERYTHING

**FREE STUDENTS TO STUDY OWN SUBJECTS
FREE STUDENTS TO STUDY THEIR OWN WAY**

Oppressive schooling is generated by TIME SLOT and
CURRICULUM, just as broadcasting is generated by
THE TIME SLOT.

OLD TN DESIGNS (1970s)

SOFTWORLD™ (suite I designed in 1976)

Planorama™

Pictrola™

ThingEez™

Bill Juggler™

Ledgerdomain™

JOT™

MY FUNNY-FACE MENUS

LATCHING TREES

RINGSTEP

MY GAMEBOARD "Document Conferencing"

VORTEXT™, 1981

Collateral text syst. for Datapoint

Fancy visual effects, very Kapow

ZigZag™, design completed 1994

(still secret)

2 1/2D integrated software

startling new visualization

in "folded quantum hyperspace"

Dimensia™, full-power extension of ZigZag

(still secret)

Fully programmable extension of ZigZag

"The Wind-Up Crossword Puzzle"

N 1/2D, in folded quantum hyperspace

TN's designs TODAY

PAN-SCROLL-ZOOM

EVERYTHING REVERSIBLE

moves

effects

(For hypermedia: I now favor

Roy Stringer designs, the most admirable)

NELSONIAN PARALLEL LINKAGE IN VARIOUS VERSIONS

COLLATERAL HYPERTEXT (always)

ZIPPERED LISTS (1965 on)

1965 Zipper Lists

(abstract, assumed development in machine language)

1972: Enfilade structures (secret)
Datapoint Zipper Lists (closer to op.system)
Computopia Zipper Lists (in TRAC)
Z.LIST EDITING (slide sideways between versions)
ZigZag (1974-94; design largely closed 1994)

COMPARE AND CONTRAST THE SCHOOLS OF DESIGN

Example of Difs: DICTATION

MIT: auto recognition

PARC: windowing application

TN: SIDEWAYS LINKING & UNIFIED CONTROLS

How wd 3 schools do MOVIE EDITING? AI, PARC, TN

"Let the computer make the movie"

"Metaphor of VCR"

VIRT OF FILM-MAKING

CLOSING DISCUSSION.

WHO CONTROLS SOFTWARE DESIGN?

Programmers

Ph.D.s in computer science

Front-office guys

MBAs shooting for Next Quarter

Auteur?

COMPLICATION-- SEVERAL MODELS

Psychological Definition of COMPLICATION:

CAN'T UNDERSTAND OR REMEMBER OR VISUALIZE

COMPLICATION I: UNKNOWN OR DUMB AXS

COMPLICATION II (Thematic): INTERFERENCE WITH A PRIN

COMPLICATION III: NUMBER OF SIMUL.CONSID

Both AXS & Thematic

COMPLICATION IV: UNFOLDING MESSY RAMIFS

TN Major Work Clusters

HO VS d15

Series of Nelson Computer Paradigms

Other Nelson Paradigms: GENERAL SCHEMATICS

Other Nelson Paradigms: Status-Ttry-Pdgm-BST-XST

CROSS-SUBSUMPTION & METAPARADIGM

What system is on top is SERIOUS

TN PARALLEL STRUX

forget my prescrips at Kaiser

LITERATURE OF THE FUTURE

Publishable Strux of Z.Lists

This is not about helpful hints for your Windows menus

I want to blow the system apart

If you leave here not wanting to blow the system apart...

TN Splandremic view

All kinds of tools

FANTICS (1970s insights)

SPL (1960s insights)

NELSON PARADIGMS

Other Nelson paradigms: collateral hypertext

Other Nelson paradigms: Xanadu publishing

Other Nelson paradigms in phil. & social sciences

1960 Viz

NELSON SOFTWARE VIEWS SUMMARIZED

SW design

Non-dimensional mapping of advantage

Scalar 2+D mappings of advantage

PARADIGMS II: Let's get into Paradigms

HO d13

Things to think about I'll write down

Disagreements will be noted but not dwelt on

Paradigm confront: your views will be Noted

LINE COMMANDS AN EARLIER CHURCH OF SOFTWARE

Contrary opinions, unless there is time, will be NOTED

New Answering Machine, expl'd by MJ ca95.5.23

I will not engage in argumentation

You have come a long way and paid a lot to learn MY views

WHERE TO BEGIN?

EXAMPLE OF USER MNEMONICS

AXS: MANY PEOPLE HATE AXS MODEL, REFUSE TO CONSIDER IT

Especially women I've been involved with:

Not one woman I've been involved with has been willing to use the vocabulary or concepts.

**WRITING, PRINCIPAL EXAMPLE OF CREATIVE WORK
THEMATICS AND SOFTWARE**

READINGS

NEW READINGS

Tyranny of the File

FX from CLB

VIRT from CLB?

HART

IR3?

SELECTED PAPERS?

OLD READINGS

VIRT from CRC

TO VIRT

to VIRT

VIRT

GAME DESIGN IS VIRT DESIGN

Criteria: MOTIVATION

PLAYABILITY

ENDGAME

"Diplomacy" nice example

VIRT OF TIME-- its curious Cyclicity

VIRT OF CHESS

You don't ask, "What would a king do now?" -- you consider rules

to VIRT

Search for Metaphysic (highest-order abstrax)

VIRTUALITY AREAS

THOUSAND TRACK MUSIC

What is Music, Anyhow?

**THAT'S WHERE YOUR METAPHYSIC
COUNTS**

Two notations

Tonal surfaces

Rhythmic spaces & their transitions

And on and on.

music virt

VISUALIZATION OF TONALITY SURFACE

to VIRT

VIRT INVOLVES THE STUDY OF ANY AP FIELD

VIRT INVOLVES LOOKING FOR GENERALITIES
ARBITRARY CONSTRUCTS
METAVIRT

Question of WHAT CONCEPTS AT THE TOP

WP

DB

SSH

Z.LISTS

AGENTS

Gen. Languages

Special Language, eg

string language

Lisplike language

Access Structure

VIRT PROCESSES
TUNING & TWEAKING OF A DESIGN & RAMIFS

skx of virt

ASSIGNING STUFF TO DISCRETE STRUCTURES

Arrow keys: coherent cluster that makes sense

metavirt

Unifying abstractions for software

(EG Zips)

Below: BEING SORTED -----

THE MOVIE-BOWL EXERCISE

"DESIGN A MOVIE"

HANDOUTS for Make-a-Movie Exercise

Make-a-Movie Small-Group Session

Rapporteurs tell of small-group work

THE SOFTWARE-BOWL EXERCISE

HANDOUTS for Big-Software Design Exercise

SOFTWARE DESIGN EXERCISE SESSION

Rapporteurs tell of small-group work

Big-Software Design Small-Group Session

END: FREE DISCUSSION

END: NELSON DESIGNS

JOT

Discussion Board

int.sw

SEAMLESSNESS AND INTEGRATION

Integrated Software versus "Applications"

std sw pdgm

STANDARD SOFTWARE PARADIGM

"Applications"

GUIs (PARC Windows)-- NAME ALL WRONG

"WORD PROCESSING"

(TN worked on first Viz. Word Proxr.)

Example of Structure and Ramifs

Let's study ODDITIES OF M.WD OUTLINER

How to move stuff around

Accidentally moving stuff you didn't mean to

Park the part to be used above

Create a dummy Leftmost

DETAILING

DETAILS MATTER IN ALL DESIGNS

Shakers: "God is in the details" (van der Rohe)

writing: **THREADED MODEL**

WRITINGS ARE COMPOSED OF THREADS!

NO THREAD MANAGEMENT FOR WRITERS!

ZIPS AS METAVIRT OF THREAD MGT FOR WRITING

HUMAN CREATIVITY (& WRITING)

CHANGE AS THE MODEL OF WRITING & WORK

"WORD PROCESSING"

Origin of WP TERM

Stupidity of it

WRITING

PROJECTS KEEP CHANGING CONCEPTUALLY

Constant problem of Overview

Overview of what you're doing

CONSTANT CHANGE OF CENTER

CONSTANT CHANGE OF WHOLE

Implications for Naming of Files

Implications for Working Terminology

Implications for "Outlines"

SYSTEMS OF CONSTRUCTS

Ex. of ARB CONSTRUCT: "The Outliner"

NOT A "METAPHOR"

to "metaphors"

"METAPHORS OF THE MAC"

Garbage can-- means "SAVE THIS OR DESTROY IT"

"Clipboard" unlike any clipboard in the world

Invisible (except by special arrangement)

Holds only one item

Better called Hidey-Hole

PAPER SIMULATOR

CRITERIA OF GOOD INTEGRATED SW

Does it do everything you want?

What are the access impediments among it?

METAPHORTHINK

Finding "true center" of metaphor

Utter nonsense

WRITING AS EXAMPLE OF WORK

Many pieces to unify

Many possible organizations

Many possible unifications

Many possible visualizations of the criterial completion

WORK

Efforrt toward CRITERIA

CRITERIA OF GOOD, MEANING USABLE, SOFTWARE

DOES IT MAKE SENSE?

Can you start using it right away?

Can you rememberr it two years later?

How long do you have to study the manual?

ONCE THE VIRTUALITY IS VISUALIZED, is it memorable?

Example: GAME OF DIPLOMACY

Example: GAME OF CHESS

Are you SMOTHERED IN OPTIONS÷

Is it COMPLICATED?

My Paradigm:: HUMAN CREATIVITY, NONCONVENTIONALITY

ALL MY STUFF OVERLAPS-- NO CATEGORIZING

I HATE BOTH MAC AND PC

I HATE ALL EXISTING SOFTWARE

VOCAB FOR THIS SEMINAR

SPLANDREMICS

FANTICS

VIRTUALITY

ACCESS STRUCTURE

"Clipboard"

ABOMINABLE HIDEY-HOLE

Cut and Paste (NOT as used popularly)

**Parallel considerations of all parts of a thing;
their global rearrangement**

**IF you want to use the conventional meanings of "cut" and
"paste," consider**

Hide, Stuff, Clip, Snip, CRAM

Plug, Rematerialize, VOMIT

TN SOFTWARE PARADIGM

"Cut and Paste"

HATRED OF "WORD PROCESSING"

BSPM CLUSTER

Territory

Spatial advantages (scalar X N)

1D: birds on a wire

Status

Non-spatial advantages

Paradigm

Biostatus

Sexual Status

Ask: WHAT SOFTWARE DO YOU LIKE MOST?

Reasons (list 'em)

TN INTRODUCES HIMSELF

TN BG

TN STORY

Paradigm challenge (useta call "values")

Quick look at your own paradigm

Go around room, each answers one aloud?

WHO OFFENDS YOU THE MOST?

Why?

What do you most fear in the world?

Why?

NOODLE EXERCISE

HANDOUTS FOR NOODLE EXERCISE

Keycluster assgt: ALT. ARROW-KEY CLUSTERS

Keycluster study

Touch-Tone Pad

Alternative Arrow Key clusters

NAMES MATTER

Connotations define a thought-space

eg "hidden line problem"

No-Hint VOICEMAIL DESIGN EXERCISE, EARLY?

VOICEMAIL EX. 2

Functions

Access Structure

VOICEMAIL

FUNX wrong

You want ARCHIVING

You want CORRESPONDING TEXT

COMMANDS WRONG

Needs a simple-and-clear system for

Next messages

Prev. message

Facts ABOUT next message

Forward IN message

Forward NEXT message

The Commands

Unification

TOUCH-TONE PALETTE

PALETTES OF CONTROL

PALETTES OF PRESENTATION

CONVENTIONAL WISDOM ABT INTERF.DESIGN

"Modelessness" (but DIFT PROGRAMS are Modes)

"User-Friendly"

Reading: MY OLD JMU PIECE?

end

"Interface Design" is THE WRONG PROBLEM!

IT MATTERS WHAT YOU CALL THINGS

Nelson terminology religion

"GOOD INTERFACES"

GLOBE

"How can this be made more like a globe?"

REACHING INTO WATER

Slight distortion, but transparent

metavirts

HIERARCHICAL FILES

the damnable Naming

huh?

VOICEMAIL

NO DECENT WRITING SYSTEM

No way to JUST START WRITING!

(Miniwriter comes closest)

Shd be at Operating-system level

You run up to the machine INSPIRED,

MUST START TYPING INSTANTLY

Studies of Software Structures

Inconsistency: WD COUNT IN M.Wd

Can't Clip

Gotta "cancel"

McInconsistency: "print" from Finder-- can't hit return till it opens

Arbitrary Constructs

If you wanted to put it in a word: I want an N-DIM OUTLINER

emotional issues of SW

A big thing is how people FEEL abt SW-- cf. Heart Transplants

TN A.D.D. -- ideal quals

I AM THE PERFECT SOFTWARE DESIGNER

Can only remember principles

Impatient, flustered

Now called "Attention Deficiency Disorder"

Losing Things

Lists, but I lose then & don't look

Names & faces

Keys & wallet

Extreme impatience, boredom

finding personal paradigms

ELUCIDATING YOUR PARADIGM CAN TAKE DECADES

EXPLANATICS

PROBS. OF DOCUMENTATION & EXPLANATION

SW SHD BE SO SIMPLE YOU DON'T NEED IT.

walk-up, instant understanding

"Value of card has been transferred to pump."

EXPLANATION IS EASIER IF SYSTEM IS EASIER

DIAGRAMMATICS

Most people can't read diagrams.

Most people can't read maps anymore.

to start

You're here to learn my views, I've heard yours

"COMPUTER LITERACY" "-- FALSE AND EVIL BASICS

MAC HORRORS

CLIPBOARD

Dropping things while moving them

Undo one level; hit space bar accidentally

Must have "application" to open file

asiniinities of comp. world

Having to name things unnecessarily

Having to name things shortly

WHY CAN'T YOU REARRANGE SIDEWAYS?

assumps of today's SW

ASSUMPS OF SW

People are infinitely patient

People don't need to understand

James Joyce Principle

"APPLICATIONS"

TN position

I WANT ALL MY WORK VINDICATED

What I want summarized: SIDEWAYS OUTLINER

TN pdgm

My lifelong paradigm: EVERYTHING IS WRONG

School the First Example

Everything is designed wrong

Houses

Cars

Telephones

Clothing

Bathrooms

So of course, ALL COMPUTERS AND SOFTWARE are designed wrong

If's as if you had to be an auto mechanic to drive

Wrong personality assumptions of user

Wrong assumptions of nature of work

Too much closure

Not enough connection

My Pdgm: 'NOTHING EVER FINISHED'

Only most recent draft

also Publication

My Pdgm: REARR AS BASIC

ITEM TRACKING, esp. in my own work

ARB. CONNECTIVITIES

PDGM: WORDS MATTER

MY COMP. PARADIGMS: PRESENTATION: VIRT

MY COMP. PARADIGMS: PRESENTATION: Linked Windows

MY COMP. PARADIGMS: PRESENTATION: Faceted Icons

MY COMPUTER PARADIGMS: REPRESENTATION: X'LOGICAL

MY COMP. PDGM: ITEM TRACKING

My Comp. Pdgm: MULTITHREADING

MY COMP. PARADIGMS: PRESENTATION: Auteurism

TN ASSUMPS OF WORK

Projects become projects forever

Closure is PARTIAL AND INCOMPLETE

Material must be RE-USABLE FOREVER

TN other work

TTRY

Exploration

Microterritory-- PLACE IN LINE

MY BG

1960 Revelation

Interactive SW

Computers and movies

Network publishing

Interactive Media

(1961 invented im. synth, pat. app. 1970)

AXS

NO WOMAN HAS NOT BEEN ANGERED BY AXS THEORY

maybe if it's presented in a book

=====

FOLDED DESIGNS (unlike "Logical" designs)

THE TC-50.

FOLDED DESIGN as NEW EMERGENT PRIN-SYSTEM

VS HO d12

"DESIGN [some kind of] SOFTWARE"

GIVEN PARC-WINDOW VIRT, How make better?

"Software Architecture"

NOT QUITE USABLE d5

design format [huh?]

HO d11

Gedankenexamples of Interf.

TRUTH ABT INTERF.DESIGN

VS d11 HO

DAY TWO: CINEMA, VIRT, MOVIE-BOWL, SOFTWARE-BOWL

Recite "hot cockalorum"

HO d9 -----

COMPUTER PARADIGMS

THERE ARE SO MANY COMPUTER PARADIGMS

Unix: PIPED PROCESSES

Mac: STD INTERFACE, CLIPBD

CULT LANGUAGES

FORTH

APL

**LISP: you can DO ANYTHING, but not
neatly**

easy hacks for anything

program is a tree structure

data is a tree structure

command is a tree structure

MACHINE LANGUAGE

Old PDPs

Apple II

OLE: Subsamples of embedding

Spreadsheet

WP

Database

Relational Database

Object-Oriented Programming

HIERARCHICAL FILE WORLD

3 Int.SW Pdgms: PARC, MIT, TN

SOME SOFTWARE PARADIGMS

Prog lgs
THE FILE PARADIGM (read: TYRF)
Spreadsheet
DB
WP
WYSIWYG

HO of d7

SOFTWARE MYTHS

HO VS d5

From VIRTBFR tues.24 d3

Virt Addenda from Stickies & Head, 94.5.24

MAIN SORT -----

FIRST DAY

EXERCISE:

LUNCH

THIRD DAY

TITLE

From >Virtsem 94.5.28 d1

HO d7 (of earlier ms.) -----

HO VS d2

VIRT MATERIALS.

Re-Org'd & Added To.

NELSONIAN PARADIGM IN VARIOUS GUISES

From VIRT Running d7

TN MSC. VIEWS

Next Section

TN Designs

SECOND DAY

HO d -----

ENDLINE

— STAY OFF HERE